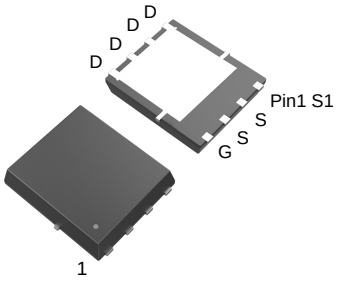
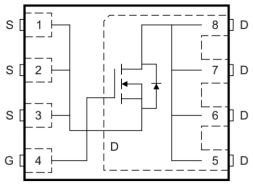
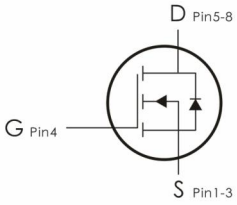
Description：

This N-Channel MOSFET uses advanced SGT technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.







Features：

1) V_{DS}=60V,I_D=90A,$R_{DS(ON)}$<5mΩ @V_{GS}=10V(Typ: 4.1mΩ)
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity SGT technology for ultra low $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.
6) MSL3

Package Marking and Ordering Information：

Part NO.	Marking	Package	Packing
NE005TG	E005T	DFN5*6-8	5000 pcs/Reel

Absolute Maximum Ratings： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	90	A
	Continuous Drain Current-T_C=100℃	55	
I_{DM}	Pulsed Drain Current [1]	360	
P_D	Power Dissipation	78	W
E_{AS}	Single pulse avalanche energy [2]	121	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	1.6	℃/W

Electrical Characteristics: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	60	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=60V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics (Note3)						
$V_{GS(th)}$	Gate-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1.2	1.8	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance [3]	V_{GS}=10V,I_D=30A	---	4.1	5	mΩ
		V_{GS}=4.5V,I_D=20A	---	6	7.5	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	---	2150	---	pF
C_{oss}	Output Capacitance		---	854.2	--	
C_{rss}	Reverse Transfer Capacitance		---	60.3	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=30V, I_D=20A, R_G=6Ω,V_{GS}=10V	---	6.5	---	ns
t_r	Rise Time		---	8.04	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	38.1	---	ns
t_f	Fall Time		---	16	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=30V, I_D=20A	---	30.1	---	nC
Q_{gs}	Gate-Source Charge		---	4.5	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	5	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_{SD}=30A	---	---	1.2	V
I_S	Continuous Drain Curren	V_D=V_G=0V	---	---	90	A
I_{SM}	Pulsed Drain Current		---	---	360	A
Trr	Reverse Recovery Time	I_F=30A,T_J=25℃	---	39	---	ns
Qrr	Reverse Recovery Charge	dI/dt=100A/us	---	45	---	nC

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. EAS condition : TJ=25℃,VDD=50V,VG=10V,L=0.5mH
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Characteristics: (Tc =25℃ unless otherwise noted)

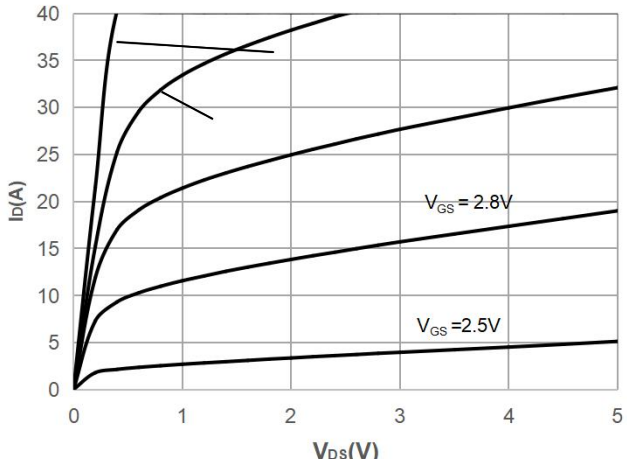


Figure 1: Output Characteristics

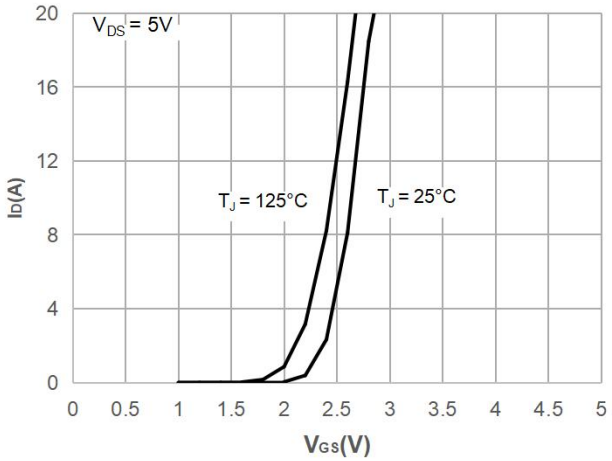


Figure 2: Typical Transfer Characteristics

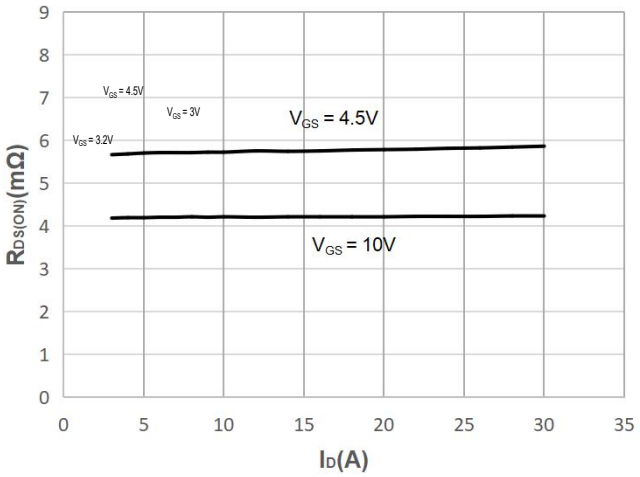


Figure 3: On-resistance vs. Drain Current

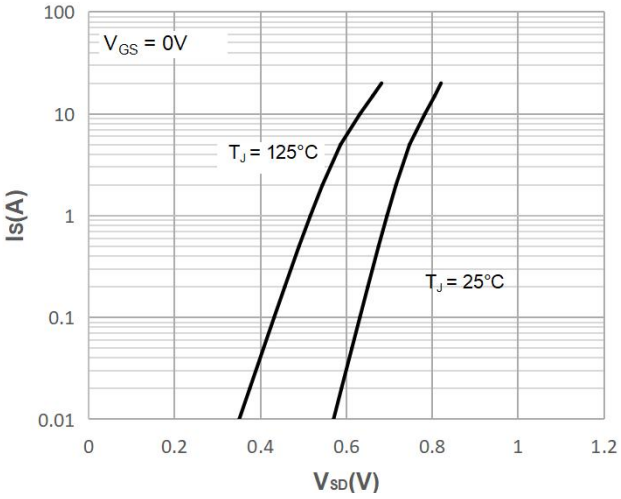


Figure 4: Body Diode Characteristics

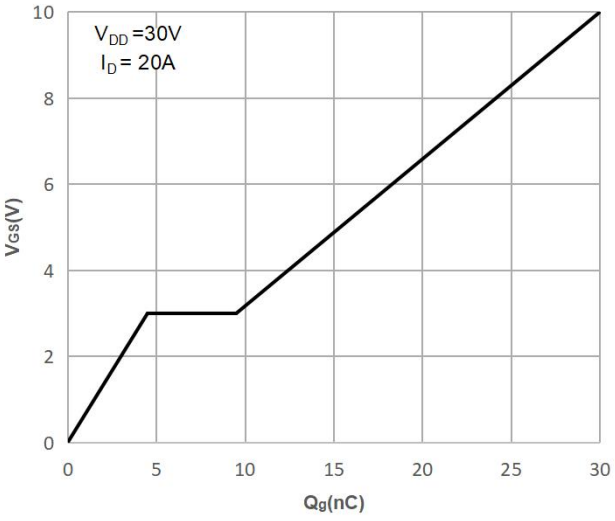


Figure 5: Gate Charge Characteristics

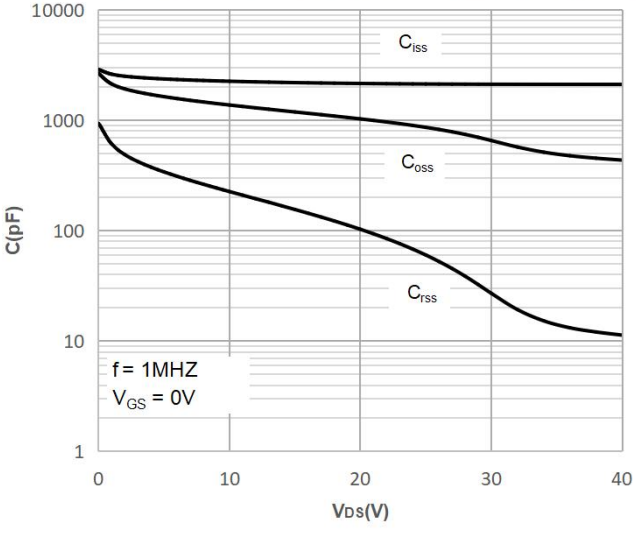


Figure 6: Capacitance Characteristics

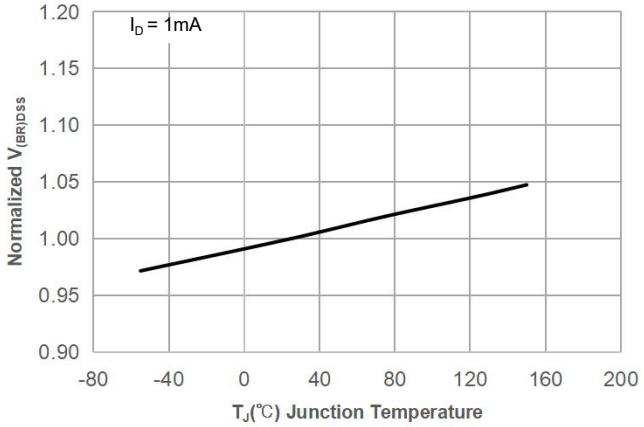


Figure 7: Normalized Breakdown voltage vs. Junction Temperature

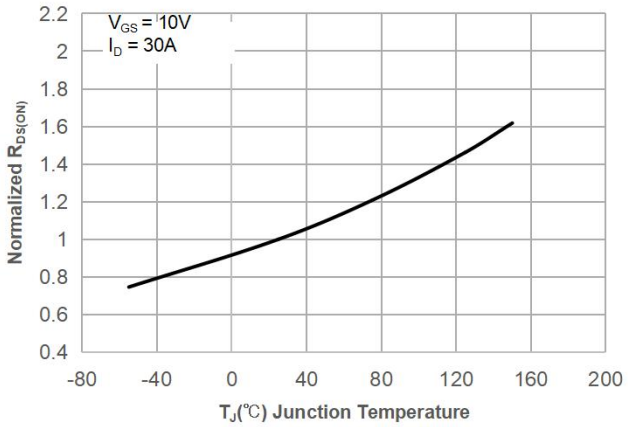


Figure 8: Normalized on Resistance vs. Junction Temperature

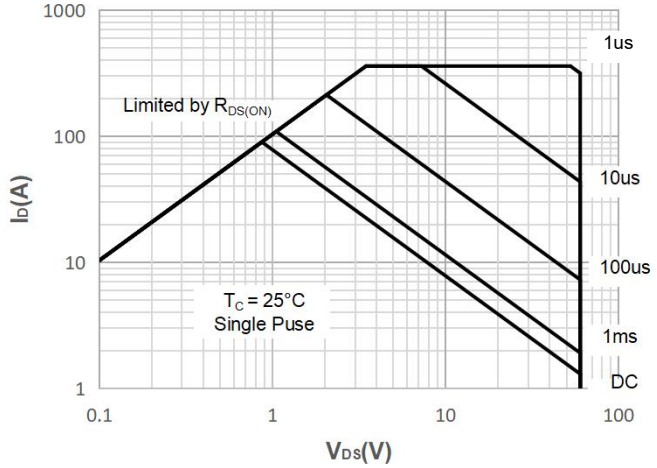


Figure 9: Maximum Safe Operating Area

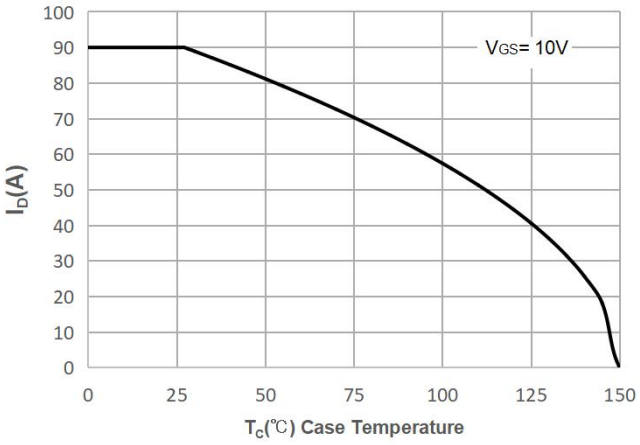


Figure 10: Maximum Continuous Drian Current vs. Case Temperature

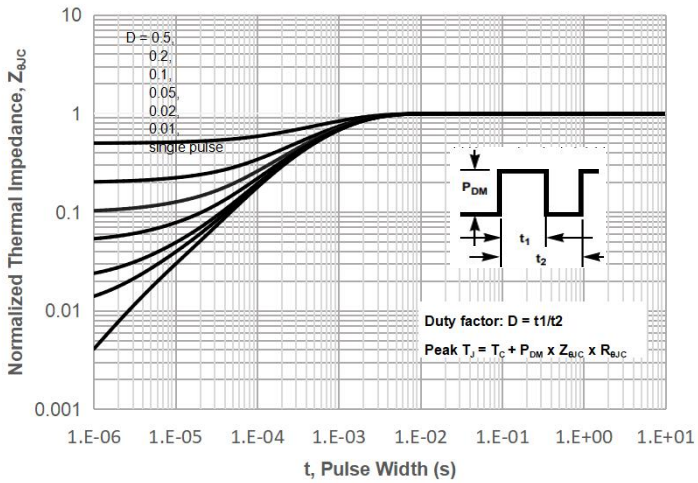


Figure 11: Normalized Maximum Transient Thermal Impedance

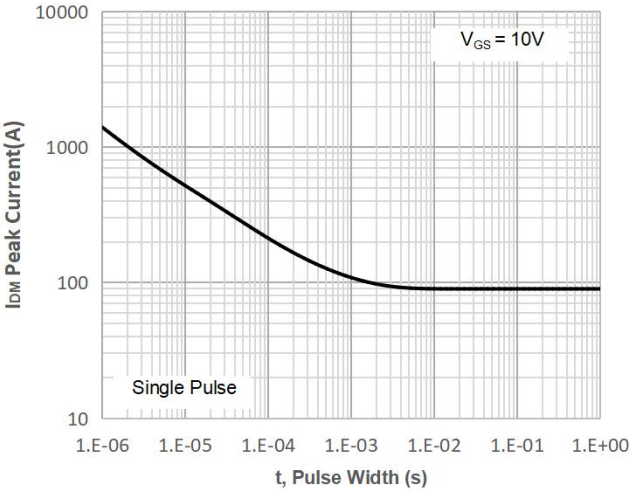
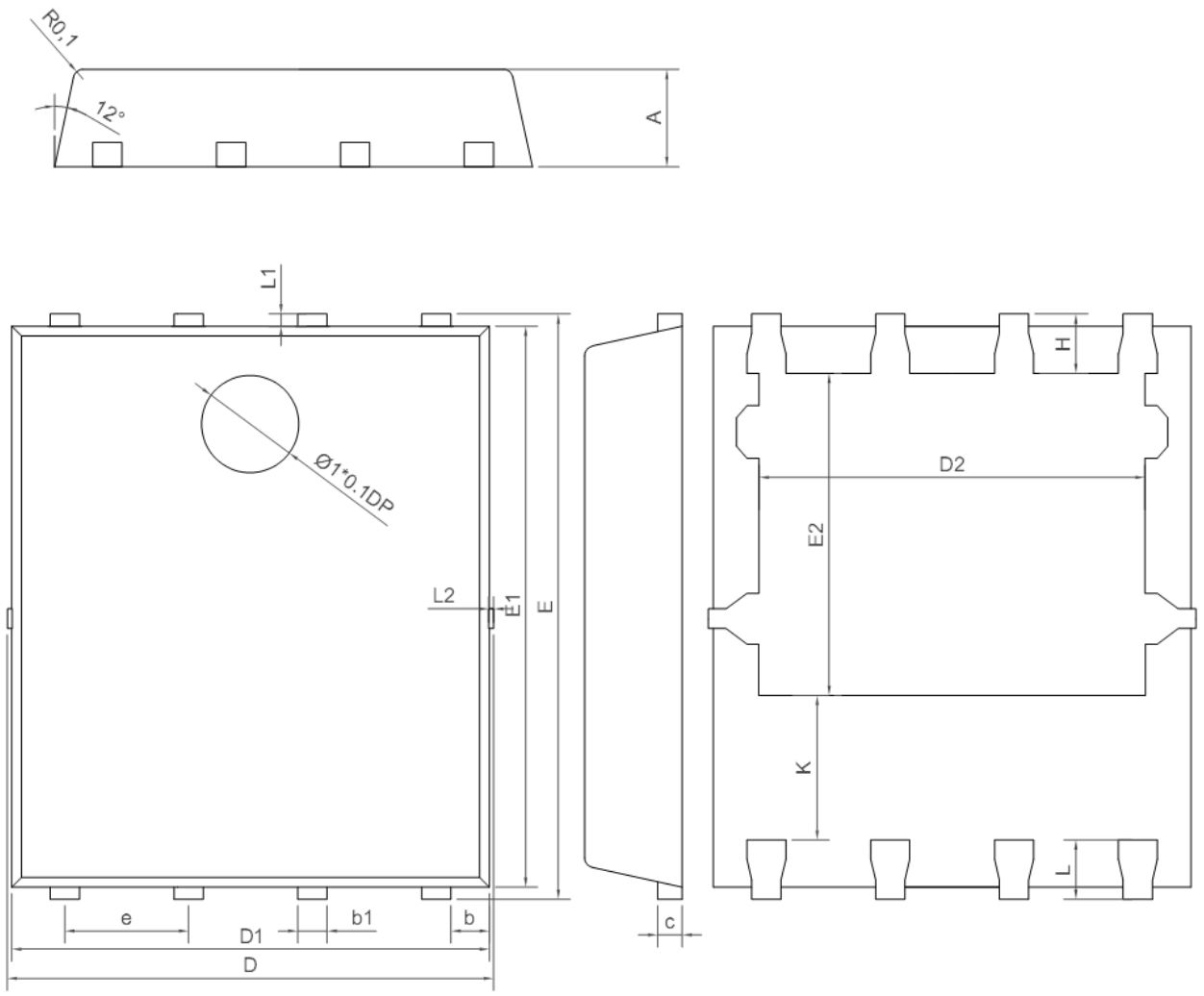


Figure 12: Peak Current Capacity

DFN5X6-8 Package Information：

UNIT：mm

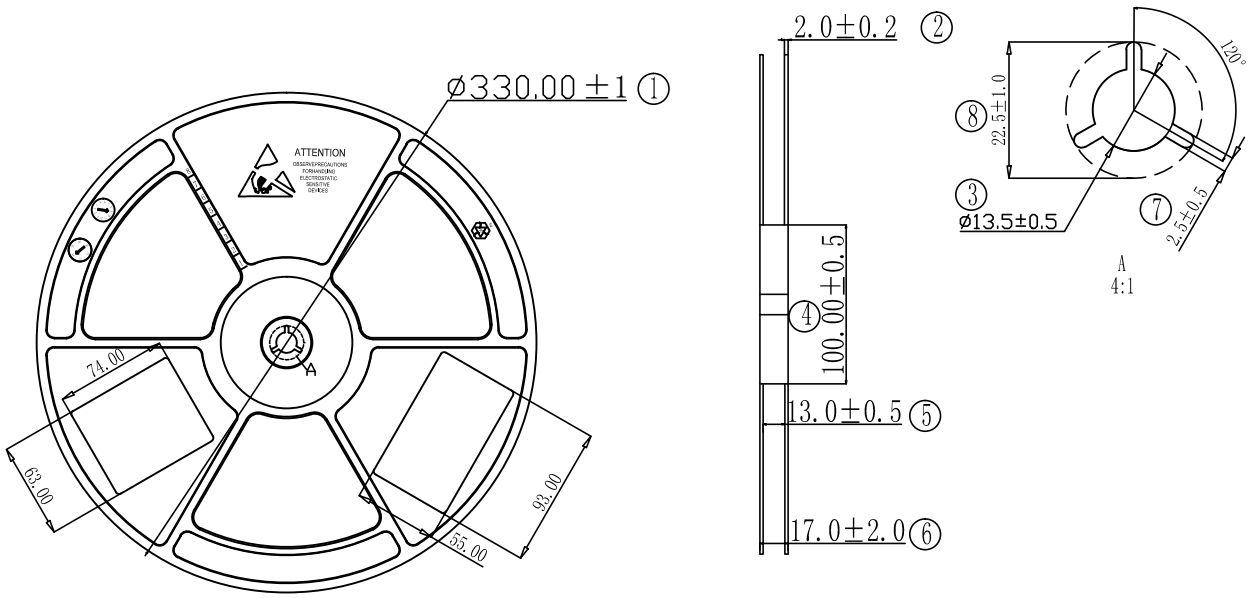


Dimensions

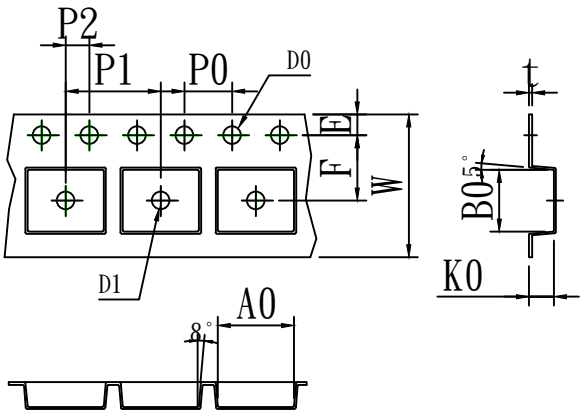
Unit	A	b	b1	c	D	D1	D2	e	E	E1	E2	H	K	L	L1	L2
mm	0.90	0.35	0.25	0.21	4.90	4.80	3.82	1.17	5.90	5.70	3.18	0.51	1.10	0.51	0.07	--
	(1.00)	(0.40)	(0.30)	(0.25)	(5.00)	(4.90)	(3.96)	(1.27)	(6.00)	(5.75)	(3.30)	(0.61)	--	(0.61)	(0.12)	--
	1.10	0.45	0.35	0.34	5.10	5.00	4.11	1.37	6.10	5.80	3.54	0.71	--	0.71	0.20	0.10

Tape & Reel Information

Dimensions in mm



Symbol	A0	B0	K0	D0	D1	P0	P1	10*P0
Spec	6.15±0.10	5.40±0.10	1.30±0.10	1.55±0.10	1.55±0.10	4.00±0.10	8.00±0.10	40.00±0.10
Symbol	W	E	F	P2	t			
Spec	12.00±0.10	1.75±0.10	5.50±0.10	2.00±0.10	0.20±0.05			



Pulling direction

Marking Information：

①. Doingter LOGO

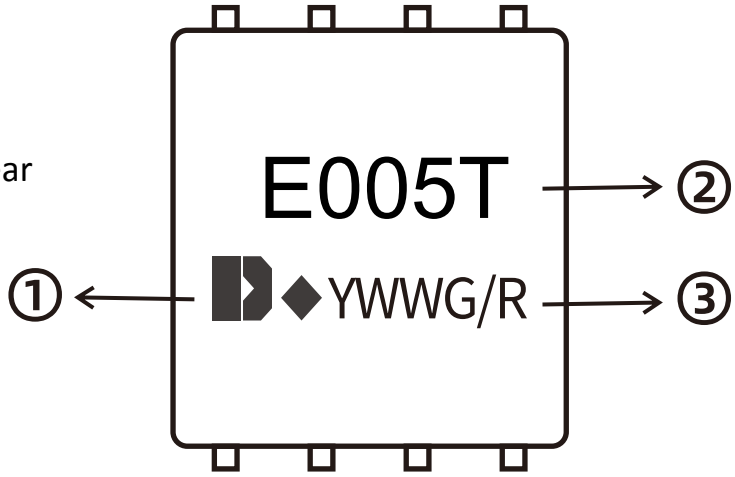
②. Part NO.

③. Date Code(YWWG / R)

Y：Year Code，last digit of the year

WW：Week Code(01-53)

G/R：G(Green) /R(Lead Free)



Previous Version

Version	Date	Subjects (major changes since last revision)
1.3	2026-01-06	Release of final version

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